ABSTRACT

An integrated search processor used in a modem for a spread spectrum communications system buffers receive samples and utilizes a time sliced transform processor operating on successive offsets from the buffer. The search processor autonomously steps through a search as configured by a microprocessor specified search parameter set, which can include the group of antennas to search over, the starting offset and width of the search window to search over, and the number of Walsh symbols to accumulate results at each offset. The search processor calculates the correlation energy at each offset, and presents a summary report of the best paths found in the search to use for demodulation element reassignment. This reduces the searching process related workload of the microprocessor and also reduces the modem costs by allowing a complete channel element modem circuit to be produced in a single IC.